Binanda Sengupta

Contact Information

SMU Labs
Singapore Management University
71 Stamford Road
Singapore 178895

E-mail: binujucse3@gmail.com

Research Interests

Applied Cryptography, Security and Privacy, Blockchain, Cryptocurrency

Current Affiliation

Postdoctoral Research Fellow (2018 – present)
School of Information Systems
Singapore Management University
Supervisors: Prof. Robert H. Deng and Prof. Yingjiu Li

Education

Doctor of Philosophy (PhD) (2013 – 2018)
Applied Statistics Unit
Indian Statistical Institute, Kolkata
Thesis Title: Proof-of-Storage Constructions for Checking Integrity of Cloud Data
Thesis Advisor: Dr. Sushmita Ruj

Master of Science (MS) (2010 – 2013)
Department of Computer Science and Engineering
Indian Institute of Technology Kharagpur
Thesis Title: SIMD-Based Implementations of Sieving in Integer-Factoring Algorithms
Thesis Advisor: Prof. Abhijit Das

Bachelor of Engineering (2003 – 2007)
Department of Computer Science and Engineering
Jadavpur University, Kolkata

Conference Publications

Binanda Sengupta and Sushmita Ruj, *Keyword-Based Delegable Proofs of Storage*, in International Conference on Information Security Practice and Experience (ISPEC 2018)

Binanda Sengupta, Nishant Nikam, Sushmita Ruj, Srinivasan Narayanamurthy and Siddhartha Nandi, *An Efficient Secure Distributed Cloud Storage for Append-only Data*, in IEEE International Conference on Cloud Computing (IEEE CLOUD 2018)

Abhishek Singh, Binanda Sengupta and Sushmita Ruj, *Certificate Transparency with Enhancements and Short Proofs*, in Australasian Conference on Information Security and Privacy (ACISP 2017)

Binanda Sengupta and Sushmita Ruj, *Publicly Verifiable Secure Cloud Storage for Dynamic Data Using Secure Network Coding*, in ACM Asia Conference on Computer and Communications Security (ACM AsiaCCS 2016)

Binanda Sengupta, Samiran Bag, Sushmita Ruj and Kouichi Sakurai, *Retricoin: Bitcoin Based on Compact Proofs of Retrievability*, in International Conference on Distributed Computing and Networking (ICDCN 2016)

Binanda Sengupta and Abhijit Das, *SIMD-Based Implementations of Sieving in Integer-Factoring Algorithms*, in International Conference on Security, Privacy, and Applied Cryptography Engineering (SPACE 2013)

Journal Publications	Binanda Sengupta and Sushmita Ruj, *Efficient Proofs of Retrievability with Public Verifiability for Dynamic Cloud Storage*, IEEE Transactions on Cloud Computing, (*accepted*, 2017)
	Binanda Sengupta and Abhijit Das, *Use of SIMD-Based Data Parallelism to Speed up Sieving in Integer-Factoring Algorithms*, Applied Mathematics and Computation, Volume 293, Elsevier, 2017
Manuscripts	Laltu Sardar, Binanda Sengupta and Sushmita Ruj, *An Efficient Dynamic Searchable Symmetric Encryption Scheme*
	Binanda Sengupta, Akanksha Dixit and Sushmita Ruj, *Secure Cloud Storage with Data Dynamics Using Secure Network Coding*
Book Chapter	Binanda Sengupta and Sushmita Ruj, *Cloud Data Auditing Using Proofs of Retrievability*, Guide to Security Assurance for Cloud Computing, Springer International Publishing (2015)
Internship	Research intern at Microsoft Research India, Summer 2016 (mentored by Dr. Satya Lokam)
Academic Visit	Sakurai Laboratory, Kyushu University, Japan, June 2015 (hosted by Prof. Kouichi Sakurai)
Invited Talks	An Introduction to Proofs of Retrievability. Crypto Seminar Series, Institute of Mathematics for Industry, Kyushu University, Japan, June 2015
	An Introduction to Proofs of Retrievability and Its Application in Bitcoin. Institute of Systems, Information Technologies and Nanotechnologies, Fukuoka, Japan, June 2015
	SIMD-Based Implementations of Sieving in Integer-Factoring Algorithms. Graduate School and Faculty of Information Science and Electrical Engineering, Kyushu University, Japan, June 2015
Reviewed Papers for	IEEE TIFS, ACM CCS 2018, ProvSec 2018, ESORICS 2018, IFIP SEC 2018, Asiacrypt 2017, ISPEC 2017, IEEE ICC 2017, ACISP 2016, INDOCRYPT 2015
Research Project	"Investigation of Cryptanalytic Techniques" under the guidance of Prof. Abhijit Das at the Department of Computer Science and Engineering, IIT Kharagpur (2010 – 2012)
Industrial Experience	Worked as an Assistant Systems Engineer at Tata Consultancy Services Limited, Kolkata, India (2007 - 2010)
Major Subjects Studied at Graduate Level	• Advanced Cryptology • Algorithm Design and Analysis • Automata, Languages and Computation • Computational Number Theory • Cryptology • Discrete Mathematics • Foundations of Computing Science • Information and Coding Theory • Probability and Stochastic Processes

Teaching

- Cryptology Internship Program, ISI Kolkata, 2017
- Cryptology Internship Program, ISI Kolkata, 2015
- Teaching Assistantship (IIT Kharagpur): Formal Languages and Automata Theory, Algorithms (Theory and Laboratory)

Awards/ Achievements

- Secured 99.65 percentile in the paper 'Computer Science and Information Technology' in GATE 2011
- Secured 145^{th} position among $50,000$ students (approx.) appeared in West Bengal Joint Entrance Examination for Engineering, 2003
- Recipient of National Scholarship for securing 21^{st} position among $500,000$ students (approx.) appeared in West Bengal Secondary Examination, 2001